ALBERTA

Economic Multipliers

1996

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PREFACE

This publication presents economic multipliers, intensity ratios and supply ratios for the Alberta economy calculated using the 1996 Alberta Treasury, Statistics Input-Output Model. Information is provided for both the open (direct and indirect impacts) and closed (direct, indirect and induced impacts) forms of the model. Economic impacts are presented for the Alberta economy only.

The tables used in this publication are derived from the 1996 interprovincial Input-Output tables released by Statistics Canda in November, 1999. A major change in the 1996 tables has been the addition of non-profit industries serving households and government service industries. Also starting with this release, the input-ouput tables will now be updated annually (instead of every five years) with the 1997 tables scheduled to be released in November, 2000.

Custom Impact Analyses

In addition to this publication, Alberta Treasury, Statistics maintains a highly disaggregated Input-Output Model for 1996 which covers 168 industries and 476 commodities. The model may be used to simulate directly both open and closed impacts where additional precision or more detailed output is required than is presented in this publication. The Alberta input-output model industry and commodity structure can also be customized to client specifications to make it more descriptive of changing economic conditions.

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INTRODUCTION

Estimates of Alberta Gross Domestic Product (GDP) found in the income and expenditure accounts of the Alberta Economic Accounts provide unduplicated measures of economic production. They are "unduplicated" because GDP measures the value of final transactions only, with all inter-business purchases and sales associated with intermediate production cancelled out.

For example, the value of a good or service sold by industry A to industry B, and then used in industry B's production process for sale into final demand, is not directly recorded in GDP. Industry A's output is not counted directly because it is implicitly included in the value of output of industry B when it is sold into final demand. If the output of industry A were counted when it is sold as an intermediate good or service, the value of this output would be double counted - once when it was sold as an intermediate input to industry B, and again as part of the value of the output of Industry B when it sells its output into final demand. To avoid this problem, goods or services are valued only at the point where they are sold into final demand (i.e., to households for consumption, to business for investment, or to government for current or capital expenditure) or when they are exported.

A by-product of measuring GDP in this fashion is that the record of such intermediate transactions is lost and, as a result, extremely useful information concerning the economic linkages between industries is not revealed. The input-output accounts bring back into record these inter-industry flows of good and services, detailing gross output of commodities by producing industries, industry use of such commodities and primary inputs, and the final consumption and investment of commodities plus any direct purchases of primary inputs for final demand.

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DESCRIPTION OF ECONOMIC MULTIPLIERS

The most common components of the input-output model are economic multipliers which include commodity and industry intensity ratios as well as industry multipliers. The concept of a multiplier is a fairly simple one to understand. For example, an increase in demand for a commodity will produce three effects which are described by economic multipliers. The first is the impact on industries (firms) which expand production to satisfy increased demand. These effects are termed the ***direct impacts***. Secondly, there is a ripple effect as these firms purchase additional required inputs from other firms. These effects are termed the ***indirect impacts***. Lastly, as firms expand production, they also hire more staff and pay out wages thereby increasing the income received by employees. Households, after withdrawing a certain portion for taxes and savings, spend this income which in turn increases demand for other commodities. These impacts are termed ***induced effects***.

Economic multipliers presented in this report are expressed in two forms: as industry multipliers (referred to as absolute multipliers), and as intensity ratios for industries and commodities.

Industry multipliers are calculated by taking the total impact observed for a change in an economic variable and dividing it by the direct change. For example, if adding 100 jobs (the direct change) to an industry's workforce resulted in a total increase of 180 jobs (the total change) in the economy overall, the industry employment multiplier would be 1.8. Industry multipliers are presented in ratio form and cannot be less than one since the direct impact is included in both the numerator and denominator.

Intensity ratios for commodities and industries are calculated by dividing the total economic impact by the change in consumption or output that led to the change. For example, if an industry increases its output by $5.0 million and this leads to an increase of $4.0 million in Alberta GDP, the intensity ratio would be 0.80 (that is 4.0/5.0). Intensity ratios are particularily useful for users because they are applied to gross output or expenditure, unlike absolute multipliers which have to be applied to the direct change.

There are two main kinds of multipliers. The first are called "open" multipliers which reflect only direct and indirect effects, and are derived from the open model. The second type of multipliers are called "closed" multipliers and include induced impacts as well as direct and indirect effects. These multipliers are derived from the closed model.

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THE OPEN AND CLOSED MODELS

The Alberta Treasury, Statistics 1996 Input-Output Model (open version) provides estimates of direct and indirect economic impacts. Results based on the Alberta open model are virtually identical to those provided by the Statistics Canada 1996 interregional input-output model since both models are based on Statistics Canada input-output tables for 1996.

There is one significant difference between the Statistics Canada model and the Alberta Treasury Model. While both models provide estimates of direct and indirect production, the Alberta Treasury Model also provides estimates of induced economic impacts when the model is closed to households.

For the closed version of the Alberta input-output model, the household sector is treated as a production sector. The input of the household sector is consumer expenditure on goods and services, while output is labour income (consisting of wages and salaries, supplementary labour income, and net income of unincorporated business). It is assumed that households, after withdrawing a portion of their income for savings and taxes, spend the rest of their income on consumer goods and services. Closing an input-output model to households increases the interdependence of the system and results in a higher impact on the variables of the model leading to multipliers of a larger magnitude than those based on the open version. The impacts of closing the system to households are referred to as induced effects.

The closed model has been criticized because it introduces a bias in favor of those economic projects with a higher labour content. For example, consider the case where two projects have the identical purchased inputs and the same level of direct GDP, but where one project has a higher proportion of labour income and the other a higher proportion of other operating surplus (e.g., corporate profits). For this case, the closed model will estimate a larger economic impact for the project with the higher proportion of labour income (other things being equal). This result occurs because the model has been "closed" to household spending but not to profits and the induced impacts estimated by the model are related to the level of household income rather than profits.

Results from both the open and closed (to households) models are presented in this publication. This approach allows users to use both versions for the purposes of analysis and to judge for themselves where the inclusion of induced impacts is warranted or advisable.

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PRODUCER AND PURCHASER PRICES

Commodity intensity ratios are presented in both producer and purchaser prices. Data that are measured in producer prices reflect the price received directly by the producer of the commodity. For example, this corresponds to the "farm gate" price in agriculture or the price received directly by a producing establishment in manufacturing.

Data in purchaser prices reflect the price paid by the final users of the good. This price, in addition to price received by the producer of the commodity, reflects other costs such as the price of transportation from the producer to the final seller, wholesale and retail mark-ups, and commodity indirect taxes. These other costs which are added to producer prices to derive purchaser prices are referred to as margins. The model treats these margins as if they were purchased directly by the purchaser of the final good. For example, if a consumer purchases a television set from a retail outlet in Alberta, the model would treat the transaction as if the consumer had purchased separately the retail and wholesale mark-ups, the transportation costs from the producer to the seller, indirect taxes, and the actual price of the television set received by the producer.

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USES AND LIMITATIONS OF MULTIPLIERS

Economic multipliers based on input-output models are a very useful tool in the decision making process, but users should be aware of their limitations. Firstly, input-output models (and the multipliers derived from these models) are static and not subject to the limits of production capacity. Secondly, these models reflect industry averages for technology use and average input costs. For these and other reasons, an input-output model will not provide a totally complete or absolute measure of the impact of economic change.

The most common use for multipliers is to estimate the economic impact associated with the establishment of a new firm; or the expansion, contraction or closure of existing firms. In these cases, it is preferable to use economic multipliers for relative rather than absolute comparisons due to the limitations of input-output models. For example, while economic multiplier analysis may be used to determine which activity has the largest economic impact, it should not be used to estimate the absolute impact of any single activity. Where multipliers are used to estimate the impacts of a single activity, the results should be treated as general estimates only and not as absolute values.

For example, if there is an increased demand for a commodity, the Alberta input-output model (and the multipliers included in this report) assume that:

- production increases can be met with no change in capacity (e.g., the construction of new plants);
- Alberta industries are able to maintain a fixed share of the market for the commodity with the remainder imported from outside the province; and
- increased output in Alberta occurs at industry average production costs using 1996 technology.

It is unlikely that any of these assumptions would hold fully in the real world. In all likelihood, there would be some change in market share for Alberta industries and the marginal costs associated with increased output may be greater or less than average costs depending on the level of capacity utilization. In addition, significant changes in technology may have occurred for some industries since 1996.

Some of these limitations may be overcome by using an updated industry input structure based on more current data, and subjecting this revised information to a computer simulation using the input-output model developed by Alberta Treasury. If users wish to exercise this option they should contact the Statistics Section of Alberta Treasury directly.

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DESCRIPTION OF ECONOMIC MULTIPLIER TABLES

In this publication, economic multipliers are presented for gross domestic product (at factor cost), labour income, employment and gross production. Below is a brief description of each of the tables contained in this report and how they should be used. Tables 1 to 4 present results from the open model, while tables 5-8 present results from the closed model. Table 9 presents commodity supply ratios for Alberta.

Table 1: Open Model: Industry Intensity Ratios

Table 1 presents multipliers for the direct and indirect effects on the Alberta economy due to a change in output for each of 58 major industies. The results are in the form of intensity ratios and measure the effects on the Alberta economy in terms of GDP at factor cost, labour income, employment and gross production. The impacts on GDP, labour income and gross production are expressed as impacts per dollar of output change while employment impacts are expressed as the number of jobs per $10,000 of output (both in 1996 and 2000 dollars).

Example:

If there was a $1 million increase in the output of the construction industry (industry no. 30) in 2000, the effects would be as follows:

- GDP at factor cost would rise by 0.626 * $1,000,000 = $626,000.
- Total labour income would increase by 0.476 * $1,000,000 = $476,000.
- Employment would grow by $1,000,000/ $10,000 * 0.100 = 10.0 person years (based on the second column of employment intensity ratios).
- Gross Production would rise by 1.628 * $1,000,000 = $1,625,000.

Table 2: Open Model: Industry Multipliers

Table 2 consists of multipliers (direct and indirect) for industries. To use these multipliers, the user must know the direct increase in GDP at factor cost, labour income, and person years of employment for which the economic impacts are being analyzed.

- To use the GDP multiplier, the direct GDP content associated with some change in output must be known or calculated. The components of direct GDP are those items which make up a firm's operating surplus (wages, profits, depreciation, etc.). The GDP multiplier is applied to this value.
- To use the labour income multiplier, the direct increase in wages, supplementary labour income and net income of unincorporated business must be known or estimated. The labour income multiplier is then applied to this value.
- The employment multiplier is expressed in terms of total persons years of employment per direct job. For example, if a firm in construction (industry no. 30) was established and in 2000 employed 100 people directly, it would create of total of 100 * 1.829 = 182.9 person years of employment (i.e., 100 direct jobs plus an additional 82.9 indirect jobs).
- The gross production multiplier is expressed in terms of total gross production per dollar of direct production. For this multiplier, the direct production equals the total expenditure or output of the project.

It must remembered that the change in output of a firm is not what constitutes its direct contribution for labour income, employment, or GDP. This means that the multipliers corresponding to these items are not applied to the change in output for an industry. The only exception is the multiplier for gross production (column 5) which is applied to this quantity.

Table 3: Open Model: Commodity Intensity Ratios - Producer Prices

Table 3 presents multipliers for the direct and indirect effects on the Alberta economy due to a change in expenditure (purchase) for each of 48 commodities. The results are in the form of intensity ratios and measure the effects on the Alberta economy in terms GDP at factor cost, labour income and employment. The impacts on GDP and labour income are expressed as impacts per dollar of expenditure change while employment impacts are expressed as the number of jobs per $10,000 purchased (both in 1996 and 2000 dollars). Table 3 presents results calculated for data that is in producer prices.

Example:

If Alberta demand for Non-Metallic Mineral Products (commodity 25) increased by $10 million during 2000, the economic effects for GDP at factor cost and for labour income would as follows:

- GDP at factor cost would rise by 0.710 * $10,000,000 = $7,100,000.
- Total labour income would increase by 0.326 * $10,000,000 = $3,260,000.
- Employment multipliers are presented for commodities purchased at both 1996 and 2000 prices, and are used somewhat differently. The first column of employment multipliers is scaled in units of $10,000 purchased in 1996 dollars. The second column which expresses employment per $10,000 in 2000 dollars can be used to estimate employment impacts for production taking place in the year 2000. For this column, multipliers have been adjusted to reflect average price changes from 1996 to 2000. In this case, the calculation would be ($10,000,000/10,000) * 0.080 = 80.0 person years of employment.

Table 4: Open Model: Commodity Intensity Ratios - Purchaser Prices

Table 4 is analogous to Table 3 except that it presents results for data in purchaser prices.

Table 5: Closed Model: Industry Intensity Ratios

Table 5 is analogous to Table 1 except that it presents results for the closed model and includes induced impacts in addition to the direct and indirect effects.

Table 6: Closed Model: Industry Multipliers

Table 6 is analogous to Table 2 except that it presents results for the closed model and includes induced impacts in addition to the direct and indirect effects.

Table 7: Closed Model: Commodity Intensity Ratios at Producer Prices

Table 7 is analogous to Table 3 except that it presents results for the closed model and includes induced impacts in addition to the direct and indirect effects.

Table 8: Closed Model: Commodity Intensity Ratios at Purchaser Prices

Table 8 is analogous to Table 4 except that it presents results for the closed model and

includes induced impacts in addition to the direct and indirect effects.

Table 9: Commodity Supply Ratios - Producer Prices

Table 9 shows the source of supply for commodities purchased in Alberta. The data is presented as a percent for Alberta, the rest of Canada, and the rest of world. This table indicates both the extent of "openness" of the Alberta economy and the degree to which the economy depends on imports. For example, 4.3 percent of textile products (commodity 14) purchased in Alberta was supplied from Alberta domestic production, 46.6 percent was imported from the rest of Canada, and 49.1 percent was imported from outside Canada.

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AN EXAMPLE USING MULTIPLIERS (OPEN MODEL)

This example is shows how multipliers and intensity ratios are used. Which you choose and how they are used is dependent upon the information available. For the purposes of this example, the results are presented for the open model only. The same calculations can be done using the appropriate closed model tables. For this example, the goal is to analyze which of two projects will provide a greater economic impact on the Alberta economy. The following information is given:

Project 1: Construction of an establishment in the Wood Manufacturing Industries

The plant (establishment) will cost $4 million to build in 2000. A further $1 million will be spent purchasing machinery and equipment. When in operation in 2001, the plant it will provide 15 person years of employment and generate annual sales of $3 million with the following distribution of costs (all data is in producer prices):

	($000's)
Wages	$ 600
Profit	425
Depreciation	340
Overhead	35
Materials	1,600
Total Output (Sales)	$ 3,000

Project 2: Expansion of output by an establishment in the Wholesale Trade Industry

This project expands production by $3 million (in producer prices) in 2000 and 2001.

Analysis of Project 1

To analyze the impact of project 1, it is necessary to divide the project into two phases. The first phase occurs in 2000 and involves the effects of constructing the plant and purchasing the machinery and equipment. The second phase is the economic impacts of the yearly output of the plant beginning in 2001.

Construction Phase of Project 1:

To measure the impact of the construction phase, refer to Table 3 which presents commodity intensity ratios. Since project 1 involves the construction of a plant to manufacture wood products, the appropriate intensity ratios are those for commodity 30 (construction). The commodity table is used because the activity would be completed in Alberta by contractors whose output (or commodity) is construction.

The construction phase during 2000 would have the following effects:

- GDP at factor cost would increase by 0.626 * $4,000,000 = $2,504,000.
- Labour income would increase by 0.476 * $4,000,000 = $1,904,000.
- Employment would rise by $4,000,000/ $10,000 * 0.100 = 40.0 persons years (based on the column scaled in 2000 dollars).

The impacts of purchasing the machinery and equipment in 2000 are also estimated by using intensity ratios from Table 3, specifically the ratios for commodity 22 (machinery and equipment). Since Alberta manufactures only a small porportion of the machinery or equipment it uses, it has a minimal impact on Alberta GDP (in this case only 20.2 percent of the machinery & equipment used in Alberta is produced in the province - see Table 9). The calculated impacts due to machinery and equipment purchases are as follows:

- GDP at factor cost would grow by 0.560 * $1,000,000 = $560,000.
- Labour income would rise by 0.329 * $1,000,000 = $329,000.
- Employment would increase by $1,000,000/ $10,000 * 0.071 = 7.1 person years (based on the column scaled in 2000 dollars).

Alberta clearly derives more economic benefit from the construction activity associated with Project 1 than it does from the purchase of machinery and equipment. This is due to the higher Alberta content for construction (i.e., local labour and materials) compared to machinery and equipment which is predominately produced outside the province.

Operations Phase of Project 1:

The second phase of impacts associated with Project 1 involves the actual operation of the plant which would begin in 2001. For this phase the industry based tables are used since the impacts associated with the economic activity of a particular industry are being analyzed. Since both the value of direct output and a breakdown of inputs has been given, either industry intensity ratios (Table 1) or industry multipliers (Table 2) can be used. To use Table 1, the procedure is to locate the appropriate industry and apply the ratios to the value of output. Here, information for industry no. 17 (wood industries) is used yielding the following impacts:

- GDP at factor cost would grow by 0.697 * $3,000,000 = $2,091,000.
- Labour Income would increase by 0.337 * $3,000,000 = $1,011,000.
- Employment for 2000 would increase by $3,000,000/$10,000 * 0.086 = 25.8 person years (based the 2000 industry employment intensity ratio).

The effects of price increases should be accounted for when determining employment impacts beyond 2000 for which employment intensity ratios are provided in Table 1. For example, if industry selling prices for wood manufactures (or some other suitable proxy for inflation) increased by 2 percent during 2001, the industry employment intensity ratio would be adjusted as follows:

- Estimated employment multiplier for 2001 = 0.086/1.02 = 0.084

Using this revised employment multiplier, growth in employment for 2001 would be estimated at 3,000,000/10,000 * 0.084 = 25.8 person years.

Since detailed cost information has been provided, the industry multipliers provided in Table 2 can also be used. The first step is to analyze the categories for which cost information has been provided and identify which of these enter into the establishment's operating surplus and thereby directly into GDP at factor cost. As a rule wages, profits and depreciation are primary inputs (not purchased from another industry) and go directly into GDP. If overhead consists of

rent payments and salaries for administration (as is assumed in this case), this category also enters directly into GDP. Materials and other purchased inputs do not since they are purchased from other industries and involve indirect economic impacts.

Therefore, the cost categories can be allocated as follows:

Wages	$	600	Direct GDP
Profit		420	Direct GDP
Depreciation		340	Direct GDP
Overhead		35	Direct GDP
Subtotal		1,400	Direct GDP
Materials		1,600	Indirect GDP
Total Costs (Inputs)	$	3,000	Gross Output

Thus, $1,400,000 out of the firm's $3 million gross output (total costs) constitutes its direct contribution to GDP at factor cost.

Included in this contribution is an estimated $600 of direct labour income and 15 person years of direct employment to which the appropriate multipliers from Table 2 (industry no.17, wood manufactures) would be applied. Based on Table 2, the indirect effects are:

- 1.507 * $1,400,000 = $2,109,800 of growth in GDP at factor cost.
- 1.694 * $600,000 = $1,016,400 of labour income.
- 1.780 * 15.0 direct jobs = 26.7 person years of employment.

In this example, the results using multipliers from Table 2 are almost identical to those calculated using the intensity ratios from Table 1. In practice, the multipliers from Table 2 should be used in preference to the intensity ratios from Table 1. Intensity ratios assume an "average" direct contribution to labour income, GDP at factor cost, and employment, and these factors can vary substantially from industry averages for particular firms. Generally, a more accurate result can be obtained by using actual data for firms and industry multipliers rather than the industry averages implied in the intensity ratios.

Analysis of Project 2

The only information provided for project 2 is that output will increase by $3 million in both 2000 and 2001 for an establishment in the wholesale trade industry. Since only industry data has been given, one of the industry tables must be used (Table 1 or 2). As there is no breakdown of costs provided, direct GDP content associated with the change in output cannot be calculated. Therefore, industry intensity ratios from Table 1 rather than the multipliers from Table 2 must be used.

For Table 1 the wholesale trade industry is number 36. The $3 million change in the value of output is applied to each intensity ratio yielding the following total impacts:

- 0.802 * $3,000,000 = $2,406,000 growth in GDP at factor cost.
- 0.553 * $3,000,000 = $1,659,000 growth in labour income.
- $3,000,000/$10,000 * .139 = 41.7 person year increase in employment.

Since the change in output of $3 million is the same for 2000 and 2001, the labour income and GDP impacts would be the same for both years

To calculate the 2001 employment impact it is necessary to allow for price increases over 2000. For example, if the industry selling price (or

another appropriate price proxy) for the wholesale trade industry increased by 2 percent in 2001, the employment multiplier (scaled in 2000 dollars) could be adjusted as follows:

- 0.139/1.02 = 0.136.

Therefore, the employment impact in 2001 would be:

- $3,000,000/$10,000 * 0.136 = 40.8 person years.

Comparison of the Two Projects

The last step in the analysis is to compare the results of the two projects. The following is a summary of the results:

		Project 1	*Project 2*
GDP at Factor Cost ($000's):	2000	3,064	2,406
	2001	2,091	2,406
Labour Income ($000's):	2000	2,233	1,659
	2001	1,011	1,659
Employment (PYs):	2000	47.1	41.7
	2001	25.8	40.8

It is clear that project 1 has the larger economic impact for 2000. This result is largely due to the construction phase of the plant. If a longer term view is taken, then project 2 may in fact yield the larger economic benefit. This can be seen by comparing impacts for 2001 for which project 2 has a greater effect on GDP, labour income and employment.

Table 1: Alberta Industry Intensity Ratios (Open Model - Direct and Indirect Impacts)

Industry	GDP at Factor Cost	Labour Income	Employment 1996	Employment 2000	Gross Output
1 Agricultural & Related Services Ind.	0.649	0.323	0.177	0.160	1.908
2 Fishing & Trapping Industries	0.627	0.576	0.386	0.351	1.701
3 Logging & Forestry Industries	0.637	0.388	0.110	0.100	1.823
4 Mining Industries	0.772	0.445	0.080	0.072	1.373
5 Crude Petroleum & Natural Gas	0.849	0.188	0.038	0.034	1.360
6 Quarry & Sand Pit Industries	0.761	0.433	0.112	0.085	1.483
7 Service Related To Mineral Extract.	0.751	0.517	0.115	0.101	1.533
8 Food Industries	0.574	0.285	0.121	0.108	2.097
9 Beverage Industries	0.496	0.253	0.070	0.059	1.639
11, 12 Rubber and Plastic Products Ind.	0.600	0.302	0.084	0.077	1.564
13-16 Leather, Textile and Clothing	0.620	0.295	0.075	0.059	1.339
17 Wood Industries	0.697	0.337	0.090	0.086	1.631
18 Furniture & Fixture Industries	0.599	0.410	0.129	0.122	1.352
19 Paper & Allied Products Industries	0.661	0.273	0.061	0.058	1.594
20 Printing, Publishing & Allied Ind.	0.688	0.464	0.129	0.117	1.330
21 Primary Metal Industries	0.411	0.174	0.036	0.035	1.284
22 Fabricated Metal Product Industries	0.580	0.386	0.095	0.089	1.332
23, 24 Machinery and Transport.Equip.	0.534	0.354	0.086	0.079	1.307
25 Electrical & Electronic Products	0.377	0.251	0.061	0.055	1.326
26 Non-Metallic Mineral Products Ind.	0.710	0.325	0.083	0.079	1.579
27 Refined Petroleum & Coal Products	0.752	0.212	0.047	0.043	2.172
28 Chemical & Chemical Products Ind.	0.711	0.181	0.038	0.037	1.560
29 Other Manufacturing Industries	0.631	0.430	0.084	0.066	1.266
30 Construction Industries	0.626	0.476	0.115	0.100	1.625
31 Transportation Industries	0.759	0.515	0.138	0.126	1.640
32 Pipeline Transport Industries	0.862	0.268	0.069	0.057	1.227
33 Storage & Warehousing Industries	0.816	0.595	0.144	0.132	1.460
34 Communication Industries	0.827	0.425	0.107	0.105	1.338
35 Other Utility Industries	0.794	0.220	0.048	0.045	1.373
36 Wholesale Trade Industries	0.802	0.553	0.154	0.139	1.517
37 Retail Trade Industries	0.817	0.652	0.305	0.270	1.483
38 Finance & Real Estate Industries	0.684	0.431	0.118	0.101	1.586
39 Insurance Industries	0.696	0.373	0.093	0.080	1.591
40 Owner Occupied Dwellings	0.821	0.288	0.066	0.059	1.122
41 Business Service Industries	0.846	0.685	0.180	0.158	1.411
42 Educational Service Industries	0.688	0.549	0.159	0.140	1.926
43 Health Services Industry	0.888	0.746	0.345	0.300	1.230
44 Accommodation & Food Service Ind.	0.716	0.518	0.293	0.277	1.503
45 Amusement & Recreational Services	0.776	0.533	0.242	0.220	1.757
46 Personal & Household Service Ind.	0.819	0.621	0.322	0.293	1.334
47 Other Service Industries	0.812	0.536	0.217	0.188	1.458
51 N.B. - P Non-profit org. excl. education	0.804	0.693	0.282	0.270	1.484
52 N.B. - P Educational institutions	0.976	0.938	0.262	0.271	1.057
53 N.B. - G Hospitals & res. Care facilities	0.827	0.720	0.234	0.203	1.283
54 N.B. - G Education	0.870	0.763	0.213	0.218	1.307
55 N.B. - G Defence services	0.628	0.534	0.129	0.120	1.476
56 N.B. - G Other municipal government	0.886	0.598	0.150	0.146	1.354
57 N.B. - G Other provincial government	0.760	0.555	0.178	0.167	1.790
58 N.B. - G Other federal government	0.827	0.680	0.170	0.157	1.471

Table 2: Alberta Industry Multipliers (Open Model - Direct and Indirect Impacts)

Industry		GDP at Factor Cost	Labour Income	Employment 1996	Employment 2000	Gross Output
1	Agricultural & Related Services Ind	2.013	2.049	1.608	1.602	1.908
2	Fishing & Trapping Industries	1.360	1.200	1.085	1.084	1.701
3	Logging & Forestry Industries	1.688	1.651	2.016	2.018	1.823
4	Mining Industries	1.271	1.263	1.445	1.444	1.373
5	Crude Petroleum & Natural Gas	1.217	2.024	2.999	2.935	1.360
6	Quarry & Sand Pit Industries	1.400	1.399	1.444	1.573	1.483
7	Service Related To Mineral Extract.	1.327	1.288	1.467	1.485	1.533
8	Food Industries	2.882	3.182	4.211	4.420	2.097
9	Beverage Industries	1.781	2.027	2.317	2.564	1.639
11, 12	Rubber and Plastic Products Ind.	1.712	1.498	1.458	1.458	1.564
13-16	Leather, Textile and Clothing	1.306	1.360	1.428	1.521	1.339
17	Wood Industries	1.507	1.694	1.848	1.780	1.631
18	Furniture & Fixture Industries	1.334	1.276	1.245	1.235	1.352
19	Paper & Allied Products Industries	1.523	1.741	2.134	2.041	1.594
20	Printing, Publishing & Allied Ind.	1.246	1.205	1.206	1.207	1.330
21	Primary Metal Industries	1.350	1.469	1.672	1.612	1.284
22	Fabricated Metal Product Industries	1.286	1.244	1.280	1.272	1.332
23, 24	Machinery and Transport.Equip.	1.302	1.271	1.317	1.312	1.307
25	Electrical & Electronic Products	1.568	1.614	1.781	1.770	1.326
26	Non-Metallic Mineral Products Ind.	1.526	1.654	1.814	1.733	1.579
27	Refined Petroleum & Coal Products	16.542	7.100	6.544	5.760	2.172
28	Chemical & Chemical Products Ind.	1.620	2.249	3.001	2.741	1.560
29	Other Manufacturing Industries	1.210	1.187	1.300	1.366	1.266
30	Construction Industries	1.876	1.677	1.798	1.829	1.625
31	Transportation Industries	1.563	1.463	1.542	1.533	1.640
32	Pipeline Transport Industries	1.130	1.254	1.282	1.310	1.227
33	Storage & Warehousing Industries	1.321	1.257	1.313	1.305	1.460
34	Communication Industries	1.221	1.306	1.393	1.353	1.338
35	Other Utility Industries	1.235	1.662	1.818	1.759	1.373
36	Wholesale Trade Industries	1.353	1.314	1.334	1.333	1.517
37	Retail Trade Industries	1.326	1.232	1.130	1.131	1.483
38	Finance & Real Estate Industries	1.511	1.519	1.560	1.598	1.586
39	Insurance Industries	1.617	1.837	2.031	2.070	1.591
40	Owner Occupied Dwellings	1.065	1.139	1.159	1.154	1.122
41	Business Service Industries	1.252	1.209	1.240	1.244	1.411
42	Educational Service Industries	2.050	1.654	1.717	1.739	1.926
43	Health Services Industry	1.125	1.085	1.053	1.055	1.230
44	Accommodation & Food Service Ind.	1.360	1.272	1.152	1.143	1.503
45	Amusement & Recreational Services	1.622	1.625	1.444	1.436	1.757
46	Personal & Household Service Ind.	1.195	1.147	1.083	1.082	1.334
47	Other Service Industries	1.263	1.252	1.185	1.191	1.458
51	N.B. - P Non-profit org. excl. education	1.322	1.199	1.142	1.132	1.484
52	N.B. - P Educational institutions	1.023	1.013	1.013	1.011	1.057
53	N.B. - G Hospitals & res. Care facilities	1.157	1.116	1.117	1.121	1.283
54	N.B. - G Education	1.148	1.105	1.112	1.099	1.307
55	N.B. - G Defence services	1.420	1.299	1.373	1.358	1.476
56	N.B. - G Other municipal government	1.242	1.215	1.247	1.227	1.354
57	N.B. - G Other provincial government	2.216	2.398	3.050	2.751	1.790
58	N.B. - G Other federal government	1.347	1.296	1.411	1.397	1.471

Table 3: Alberta Commodity Intensity Ratios in Producer Prices (Open Model - Direct and Indirect Impacts)

Commodity	GDP at Factor Cost	Labour Income	Employment 1996	Employment 2000	Gross Output
1 Grains	0.649	0.323	0.177	0.160	1.908
2 Other agricultural products	0.648	0.324	0.176	0.159	1.907
3 Forestry products	0.641	0.384	0.115	0.104	1.822
4 Fish, seafood and trapping products	0.627	0.576	0.386	0.351	1.701
5 Metal ores & concentrates	0.000	0.000	0.000	0.000	0.000
6 Mineral fuels	0.847	0.194	0.039	0.035	1.361
7 Non-metallic minerals	0.785	0.325	0.075	0.062	1.441
8 Services incidental to mining	0.751	0.516	0.115	0.101	1.532
9 Meat, fish, and dairy products	0.575	0.286	0.122	0.109	2.093
10 Fruit, veg. and other food products, feeds	0.618	0.399	0.191	0.177	1.572
11 Soft drinks and alcoholic beverages	0.618	0.399	0.191	0.177	1.572
13 Leather, rubber, and plastic products	0.612	0.302	0.084	0.076	1.562
14 Textile products	0.552	0.450	0.118	0.093	1.301
15 Hosiery, clothing and accessories	0.540	0.346	0.087	0.068	1.267
16 Lumber and wood products	0.697	0.342	0.093	0.088	1.630
17 Furniture and fixtures	0.603	0.406	0.126	0.119	1.365
18 Wood pulp, paper and paper products	0.662	0.284	0.065	0.062	1.581
19 Printing and publishing	0.693	0.470	0.132	0.119	1.343
20 Primary metal products	0.439	0.209	0.046	0.044	1.292
21 Other metal products	0.582	0.382	0.095	0.088	1.341
22 Machinery and equipment	0.560	0.329	0.077	0.071	1.332
23 Motor veh., oth. transport equip. and parts	0.617	0.421	0.110	0.100	1.354
24 Electrical, electronic and communic. prod.	0.398	0.262	0.064	0.057	1.326
25 Non-metallic mineral products	0.710	0.326	0.083	0.080	1.578
26 Petroleum and coal products	0.787	0.204	0.044	0.040	1.872
27 Chemicals, pharmaceuticals&chem. prod.	0.708	0.185	0.042	0.040	1.573
28 Other manufactured products	0.638	0.424	0.098	0.081	1.321
29 Residential Construction	0.561	0.432	0.119	0.102	1.501
30 Non-Residential Construction	0.640	0.489	0.111	0.098	1.716
31 Repair Construction	0.673	0.540	0.139	0.126	1.376
32 Transportation and storage	0.802	0.423	0.114	0.102	1.468
33 Communications services	0.827	0.426	0.108	0.105	1.338
34 Other utilities	0.811	0.292	0.067	0.064	1.369
35 Wholesaling margins	0.791	0.541	0.151	0.136	1.521
36 Retailing margins	0.816	0.648	0.302	0.268	1.484
37 Gross imputed rent	0.821	0.288	0.066	0.059	1.122
38 Other finance, insurance, & real estate	0.691	0.432	0.120	0.103	1.582
39 Business and computer services	0.837	0.652	0.174	0.154	1.422
40 Private education services	0.847	0.737	0.206	0.208	1.385
41 Private Health and social services	0.870	0.734	0.321	0.282	1.270
42 Accommodation services and meals	0.721	0.523	0.290	0.273	1.507
43 Other services	0.792	0.557	0.229	0.205	1.519
47 Non-profit institutions serving households	0.815	0.709	0.281	0.270	1.455
48 Government sector services	0.810	0.648	0.188	0.178	1.483

Table 4: Alberta Commodity Intensity Ratios in Purchaser Prices (Open Model - Direct and Indirect Impacts)

Commodity	GDP at Factor Cost	Labour Income	Employment 1996	Employment 2000	Gross Output
1 Grains	0.653	0.332	0.175	0.159	1.899
2 Other agricultural products	0.651	0.330	0.174	0.158	1.900
3 Forestry products	0.638	0.386	0.115	0.104	1.848
4 Fish, seafood and trapping products	0.718	0.493	0.142	0.128	1.761
5 Metal ores & concentrates	0.307	0.209	0.057	0.052	1.651
6 Mineral fuels	0.834	0.251	0.055	0.051	1.363
7 Non-metallic minerals	0.711	0.368	0.094	0.082	1.730
8 Services incidental to mining	0.751	0.516	0.115	0.101	1.532
9 Meat, fish, and dairy products	0.586	0.301	0.124	0.111	2.068
10 Fruit, veg. and other food products, feeds	0.617	0.342	0.128	0.115	1.991
11 Soft drinks and alcoholic beverages	0.276	0.186	0.078	0.070	1.246
13 Leather, rubber, and plastic products	0.650	0.356	0.103	0.093	1.579
14 Textile products	0.764	0.529	0.154	0.139	1.541
15 Hosiery, clothing and accessories	0.713	0.521	0.195	0.172	1.447
16 Lumber and wood products	0.734	0.448	0.125	0.114	1.625
17 Furniture and fixtures	0.711	0.484	0.140	0.128	1.484
18 Wood pulp, paper and paper products	0.683	0.370	0.097	0.089	1.666
19 Printing and publishing	0.675	0.459	0.130	0.118	1.357
20 Primary metal products	0.574	0.342	0.088	0.081	1.452
21 Other metal products	0.636	0.426	0.112	0.103	1.421
22 Machinery and equipment	0.660	0.422	0.110	0.100	1.439
23 Motor veh., oth. transport equip. and parts	0.789	0.569	0.198	0.177	1.513
24 Electrical, electronic and communic. prod.	0.649	0.444	0.126	0.113	1.472
25 Non-metallic mineral products	0.715	0.379	0.102	0.096	1.625
26 Petroleum and coal products	0.595	0.214	0.055	0.050	1.539
27 Chemicals, pharmaceuticals & chem. prod.	0.712	0.242	0.061	0.056	1.598
28 Other manufactured products	0.716	0.496	0.144	0.127	1.483
29 Residential Construction	0.561	0.432	0.119	0.102	1.501
30 Non-Residential Construction	0.640	0.489	0.111	0.098	1.716
31 Repair Construction	0.663	0.532	0.137	0.124	1.370
32 Transportation and storage	0.754	0.514	0.141	0.128	1.612
33 Communications services	0.816	0.421	0.106	0.103	1.334
34 Other utilities	0.808	0.291	0.067	0.064	1.368
35 Wholesaling margins	0.791	0.541	0.151	0.136	1.521
36 Retailing margins	0.798	0.633	0.295	0.262	1.473
37 Gross imputed rent	0.821	0.288	0.066	0.059	1.122
38 Other finance, insurance, & real estate	0.688	0.429	0.119	0.103	1.579
39 Business and computer services	0.830	0.647	0.173	0.153	1.419
40 Private education services	0.847	0.736	0.206	0.208	1.385
41 Private Health and social services	0.870	0.734	0.321	0.282	1.270
42 Accommodation services and meals	0.697	0.506	0.280	0.264	1.490
43 Other services	0.788	0.555	0.228	0.204	1.517
47 Non-profit institutions serving households	0.815	0.709	0.281	0.270	1.455
48 Government sector services	0.810	0.648	0.188	0.178	1.483

Table 5: Alberta Industry Intensity Ratios
(Closed Model - Direct, Indirect and Induced Impacts)

Industry		GDP at Factor Cost	Household Income	Employment 1996	Employment 2000	Gross Output
1	Agricultural & Related Services Ind	0.796	0.410	0.209	0.189	2.593
2	Fishing & Trapping Industries	0.889	0.732	0.443	0.402	2.924
3	Logging & Forestry Industries	0.814	0.493	0.149	0.134	2.646
4	Mining Industries	0.975	0.566	0.124	0.112	2.319
5	Crude Petroleum & Natural Gas	0.934	0.239	0.056	0.051	1.760
6	Quarry & Sand Pit Industries	0.958	0.550	0.155	0.123	2.403
7	Service Related To Mineral Extract.	0.987	0.656	0.166	0.147	2.630
8	Food Industries	0.704	0.362	0.149	0.133	2.702
9	Beverage Industries	0.611	0.321	0.095	0.081	2.176
11, 12	Rubber and Plastic Products Ind.	0.738	0.384	0.114	0.104	2.206
13-16	Leather, Textile and Clothing	0.754	0.374	0.104	0.085	1.965
17	Wood Industries	0.851	0.428	0.124	0.116	2.346
18	Furniture & Fixture Industries	0.786	0.521	0.169	0.158	2.223
19	Paper & Allied Products Industries	0.786	0.346	0.088	0.082	2.172
20	Printing, Publishing & Allied Ind.	0.899	0.589	0.175	0.158	2.314
21	Primary Metal Industries	0.491	0.221	0.054	0.051	1.654
22	Fabricated Metal Product Industries	0.757	0.491	0.133	0.123	2.152
23, 24	Machinery and Transport.Equip.	0.696	0.450	0.121	0.110	2.060
25	Electrical & Electronic Products	0.492	0.319	0.086	0.078	1.859
26	Non-Metallic Mineral Products Ind.	0.858	0.413	0.114	0.108	2.270
27	Refined Petroleum & Coal Products	0.848	0.269	0.068	0.062	2.622
28	Chemical & Chemical Products Ind.	0.793	0.229	0.056	0.053	1.944
29	Other Manufacturing Industries	0.827	0.546	0.127	0.104	2.179
30	Construction Industries	0.843	0.604	0.162	0.142	2.635
31	Transportation Industries	0.994	0.654	0.188	0.172	2.734
32	Pipeline Transport Industries	0.984	0.341	0.095	0.081	1.797
33	Storage & Warehousing Industries	1.088	0.756	0.202	0.185	2.724
34	Communication Industries	1.021	0.540	0.149	0.142	2.240
35	Other Utility Industries	0.894	0.279	0.070	0.064	1.839
36	Wholesale Trade Industries	1.054	0.702	0.208	0.188	2.691
37	Retail Trade Industries	1.114	0.827	0.369	0.328	2.867
38	Finance & Real Estate Industries	0.880	0.548	0.160	0.139	2.501
39	Insurance Industries	0.865	0.473	0.130	0.113	2.382
40	Owner Occupied Dwellings	0.952	0.365	0.094	0.085	1.733
41	Business Service Industries	1.158	0.869	0.247	0.219	2.865
42	Educational Service Industries	0.938	0.697	0.213	0.189	3.092
43	Health Services Industry	1.228	0.947	0.419	0.367	2.813
44	Accommodation & Food Service Ind.	0.952	0.658	0.344	0.323	2.603
45	Amusement & Recreational Services	1.019	0.676	0.295	0.267	2.888
46	Personal & Household Service Ind.	1.102	0.788	0.383	0.349	2.652
47	Other Service Industries	1.057	0.681	0.269	0.236	2.596
51	N.B. - P Non-profit org. excl. education	1.120	0.880	0.350	0.332	2.954
52	N.B. - P Educational institutions	1.404	1.191	0.354	0.354	3.049
53	N.B. - G Hospitals & res. Care facilities	1.156	0.914	0.304	0.267	2.812
54	N.B. - G Education	1.218	0.969	0.288	0.285	2.928
55	N.B. - G Defence services	0.871	0.678	0.182	0.167	2.610
56	N.B. - G Other municipal government	1.159	0.760	0.209	0.199	2.624
57	N.B. - G Other provincial government	1.013	0.705	0.233	0.216	2.969
58	N.B. - G Other federal government	1.137	0.864	0.236	0.217	2.916

Table 6: Alberta Industry Multipliers
(Closed Model - Direct, Indirect and Induced Impacts)

Industry		GDP at Factor Cost	Household Income	Employment 1996	Employment 2000	Gross Output
1	Agricultural & Related Services Ind	2.470	2.602	1.896	1.888	2.593
2	Fishing & Trapping Industries	1.930	1.524	1.244	1.241	2.924
3	Logging & Forestry Industries	2.156	2.097	2.712	2.715	2.646
4	Mining Industries	1.605	1.604	2.232	2.237	2.319
5	Crude Petroleum & Natural Gas	1.340	2.571	4.464	4.378	1.760
6	Quarry & Sand Pit Industries	1.763	1.776	1.992	2.289	2.403
7	Service Related To Mineral Extract.	1.743	1.635	2.114	2.162	2.630
8	Food Industries	3.535	4.041	5.184	5.456	2.702
9	Beverage Industries	2.195	2.574	3.133	3.543	2.176
11, 12	Rubber and Plastic Products Ind.	2.105	1.902	1.972	1.966	2.206
13-16	Leather, Textile and Clothing	1.589	1.727	1.979	2.195	1.965
17	Wood Industries	1.839	2.151	2.525	2.402	2.346
18	Furniture & Fixture Industries	1.751	1.620	1.634	1.605	2.223
19	Paper & Allied Products Industries	1.809	2.210	3.071	2.898	2.172
20	Printing, Publishing & Allied Ind.	1.628	1.530	1.632	1.632	2.314
21	Primary Metal Industries	1.611	1.865	2.458	2.318	1.654
22	Fabricated Metal Product Industries	1.677	1.580	1.791	1.763	2.152
23, 24	Machinery and Transport.Equip.	1.695	1.614	1.850	1.836	2.060
25	Electrical & Electronic Products	2.044	2.049	2.497	2.485	1.859
26	Non-Metallic Mineral Products Ind.	1.845	2.100	2.518	2.363	2.270
27	Refined Petroleum & Coal Products	18.667	9.016	9.422	8.262	2.622
28	Chemical & Chemical Products Ind.	1.808	2.856	4.386	3.946	1.944
29	Other Manufacturing Industries	1.587	1.507	1.951	2.163	2.179
30	Construction Industries	2.526	2.130	2.531	2.601	2.635
31	Transportation Industries	2.047	1.858	2.110	2.090	2.734
32	Pipeline Transport Industries	1.290	1.592	1.773	1.856	1.797
33	Storage & Warehousing Industries	1.760	1.596	1.846	1.828	2.724
34	Communication Industries	1.507	1.659	1.936	1.842	2.240
35	Other Utility Industries	1.391	2.111	2.635	2.527	1.839
36	Wholesale Trade Industries	1.778	1.669	1.806	1.805	2.691
37	Retail Trade Industries	1.807	1.564	1.368	1.374	2.867
38	Finance & Real Estate Industries	1.945	1.929	2.122	2.206	2.501
39	Insurance Industries	2.012	2.332	2.830	2.930	2.382
40	Owner Occupied Dwellings	1.235	1.446	1.655	1.651	1.733
41	Business Service Industries	1.714	1.535	1.703	1.723	2.865
42	Educational Service Industries	2.796	2.100	2.299	2.345	3.092
43	Health Services Industry	1.555	1.377	1.277	1.288	2.813
44	Accommodation & Food Service Ind.	1.809	1.615	1.352	1.333	2.603
45	Amusement & Recreational Services	2.129	2.063	1.756	1.745	2.888
46	Personal & Household Service Ind.	1.608	1.457	1.289	1.285	2.652
47	Other Service Industries	1.643	1.590	1.473	1.493	2.596
51	N.B. - P Non-profit org. excl. education	1.840	1.522	1.418	1.389	2.954
52	N.B. - P Educational institutions	1.472	1.286	1.370	1.322	3.049
53	N.B. - G Hospitals & res. Care facilities	1.616	1.417	1.456	1.473	2.812
54	N.B. - G Education	1.607	1.403	1.505	1.441	2.928
55	N.B. - G Defence services	1.970	1.649	1.931	1.898	2.610
56	N.B. - G Other municipal government	1.624	1.543	1.736	1.674	2.624
57	N.B. - G Other provincial government	2.954	3.045	3.983	3.565	2.969
58	N.B. - G Other federal government	1.852	1.646	1.968	1.935	2.916

Table 7: Alberta Commodity Intensity Ratios in Producer Prices (Closed Model - Direct, Indirect and Induced Impacts)

Commodity	GDP at Factor Cost	Labour Income	Employment 1996	Employment 2000	Gross Output
1 Grains	0.796	0.410	0.209	0.189	2.593
2 Other agricultural products	0.796	0.412	0.208	0.188	2.595
3 Forestry products	0.816	0.488	0.152	0.138	2.637
4 Fish, seafood and trapping products	0.889	0.732	0.443	0.402	2.924
5 Metal ores & concentrates	0.000	0.000	0.000	0.000	0.000
6 Mineral fuels	0.935	0.246	0.058	0.052	1.772
7 Non-metallic minerals	0.933	0.413	0.106	0.091	2.131
8 Services incidental to mining	0.987	0.655	0.166	0.147	2.628
9 Meat, fish, and dairy products	0.706	0.363	0.151	0.135	2.700
10 Fruit, veg. and other food products, feeds	0.800	0.507	0.230	0.212	2.420
11 Soft drinks and alcoholic beverages	0.800	0.507	0.230	0.212	2.420
13 Leather, rubber, and plastic products	0.749	0.383	0.113	0.103	2.202
14 Textile products	0.757	0.571	0.162	0.133	2.255
15 Hosiery, clothing and accessories	0.698	0.439	0.121	0.099	2.001
16 Lumber and wood products	0.853	0.434	0.127	0.118	2.356
17 Furniture and fixtures	0.788	0.516	0.166	0.155	2.227
18 Wood pulp, paper and paper products	0.792	0.361	0.093	0.087	2.185
19 Printing and publishing	0.907	0.597	0.178	0.161	2.341
20 Primary metal products	0.534	0.265	0.066	0.062	1.736
21 Other metal products	0.757	0.486	0.132	0.122	2.153
22 Machinery and equipment	0.710	0.418	0.110	0.100	2.031
23 Motor veh., oth. transport equip. and parts	0.809	0.534	0.151	0.137	2.248
24 Electrical, electronic and communic. prod.	0.518	0.333	0.090	0.081	1.882
25 Non-metallic mineral products	0.858	0.414	0.115	0.109	2.270
26 Petroleum and coal products	0.880	0.259	0.064	0.058	2.304
27 Chemicals, pharmaceuticals&chem. prod.	0.792	0.235	0.060	0.056	1.965
28 Other manufactured products	0.831	0.539	0.139	0.119	2.222
29 Residential Construction	0.757	0.549	0.162	0.140	2.407
30 Non-Residential Construction	0.862	0.621	0.159	0.142	2.742
31 Repair Construction	0.918	0.685	0.193	0.175	2.508
32 Transportation and storage	0.995	0.537	0.156	0.139	2.367
33 Communications services	1.021	0.541	0.150	0.143	2.243
34 Other utilities	0.944	0.370	0.096	0.090	1.988
35 Wholesaling margins	1.037	0.687	0.204	0.184	2.669
36 Retailing margins	1.112	0.822	0.366	0.326	2.859
37 Gross imputed rent	0.952	0.365	0.094	0.085	1.733
38 Other finance, insurance, & real estate	0.888	0.548	0.162	0.142	2.499
39 Business and computer services	1.134	0.828	0.238	0.212	2.806
40 Private education services	1.183	0.935	0.278	0.273	2.948
41 Private Health and social services	1.205	0.932	0.393	0.347	2.829
42 Accommodation services and meals	0.959	0.664	0.341	0.320	2.616
43 Other services	1.046	0.708	0.284	0.255	2.703
47 Non-profit institutions serving households	1.139	0.900	0.350	0.333	2.960
48 Government sector services	1.105	0.823	0.251	0.236	2.859

Table 8: Alberta Commodity Intensity Ratios in Purchaser Prices (Closed Model - Direct, Indirect and Induced Impacts)

Commodity	GDP at Factor Cost	Labour Income	Employment 1996	Employment 2000	Gross Output
1 Grains	0.804	0.421	0.208	0.188	2.603
2 Other agricultural products	0.802	0.420	0.207	0.188	2.602
3 Forestry products	0.814	0.490	0.152	0.138	2.668
4 Fish, seafood and trapping products	0.943	0.627	0.190	0.172	2.808
5 Metal ores & concentrates	0.403	0.266	0.078	0.071	2.095
6 Mineral fuels	0.948	0.319	0.080	0.073	1.896
7 Non-metallic minerals	0.879	0.467	0.130	0.115	2.511
8 Services incidental to mining	0.987	0.655	0.166	0.147	2.628
9 Meat, fish, and dairy products	0.723	0.382	0.154	0.137	2.707
10 Fruit, veg. and other food products, feeds	0.773	0.435	0.162	0.145	2.718
11 Soft drinks and alcoholic beverages	0.360	0.236	0.096	0.086	1.640
13 Leather, rubber, and plastic products	0.812	0.452	0.138	0.125	2.334
14 Textile products	1.005	0.672	0.206	0.186	2.665
15 Hosiery, clothing and accessories	0.951	0.661	0.246	0.218	2.553
16 Lumber and wood products	0.938	0.568	0.169	0.154	2.575
17 Furniture and fixtures	0.932	0.615	0.188	0.171	2.512
18 Wood pulp, paper and paper products	0.852	0.470	0.133	0.122	2.451
19 Printing and publishing	0.884	0.583	0.175	0.158	2.333
20 Primary metal products	0.730	0.434	0.122	0.111	2.177
21 Other metal products	0.830	0.540	0.154	0.141	2.325
22 Machinery and equipment	0.852	0.536	0.152	0.138	2.335
23 Motor veh., oth. transport equip. and parts	1.048	0.722	0.254	0.228	2.721
24 Electrical, electronic and communic. prod.	0.852	0.564	0.169	0.152	2.415
25 Non-metallic mineral products	0.888	0.481	0.140	0.129	2.429
26 Petroleum and coal products	0.692	0.271	0.076	0.069	1.993
27 Chemicals, pharmaceuticals&chem. prod.	0.822	0.307	0.085	0.078	2.112
28 Other manufactured products	0.942	0.629	0.193	0.171	2.535
29 Residential Construction	0.757	0.549	0.162	0.140	2.407
30 Non-Residential Construction	0.862	0.621	0.159	0.142	2.742
31 Repair Construction	0.904	0.675	0.190	0.172	2.486
32 Transportation and storage	0.989	0.653	0.192	0.174	2.704
33 Communications services	1.008	0.534	0.148	0.141	2.227
34 Other utilities	0.941	0.369	0.096	0.090	1.985
35 Wholesaling margins	1.037	0.687	0.204	0.184	2.669
36 Retailing margins	1.087	0.804	0.358	0.318	2.817
37 Gross imputed rent	0.952	0.365	0.094	0.085	1.733
38 Other finance, insurance, & real estate	0.883	0.545	0.161	0.141	2.491
39 Business and computer services	1.125	0.822	0.237	0.210	2.793
40 Private education services	1.182	0.935	0.278	0.273	2.948
41 Private Health and social services	1.205	0.932	0.393	0.347	2.828
42 Accommodation services and meals	0.927	0.642	0.330	0.309	2.563
43 Other services	1.041	0.704	0.282	0.254	2.694
47 Non-profit institutions serving households	1.139	0.900	0.350	0.333	2.960
48 Government sector services	1.105	0.823	0.251	0.236	2.859

Table 9: Alberta Commodity Supply Ratios (Percent)

	Commodity	Alberta	Rest of Canada	Rest of World	Total Supply
1	Grains	95.0	4.3	0.6	100.0
2	Other agricultural products	83.6	12.7	3.8	100.0
3	Forestry products	74.3	11.1	14.5	100.0
4	Fish, seafood and trapping products	10.6	57.3	32.1	100.0
5	Metal ores & concentrates	0.0	48.8	51.2	100.0
6	Mineral fuels	95.4	4.6	0.0	100.0
7	Non-metallic minerals	35.7	20.9	43.5	100.0
8	Services incidental to mining	99.3	0.7	0.0	100.0
9	Meat, fish, and dairy products	62.8	30.7	6.5	100.0
10	Fruit, veg. and other food products, feeds	33.8	52.6	13.5	100.0
11	Soft drinks and alcoholic beverages	67.3	19.0	13.7	100.0
12	Tobacco and tobacco products	0.0	93.5	6.5	100.0
13	Leather, rubber, and plastic products	23.1	38.1	38.8	100.0
14	Textile products	4.3	46.6	49.1	100.0
15	Hosiery, clothing and accessories	4.8	57.2	38.0	100.0
16	Lumber and wood products	53.8	38.8	7.4	100.0
17	Furniture and fixtures	25.4	44.5	30.2	100.0
18	Wood pulp, paper and paper products	24.6	57.9	17.5	100.0
19	Printing and publishing	45.2	37.2	17.6	100.0
20	Primary metal products	23.6	34.0	42.4	100.0
21	Other metal products	21.6	31.6	46.7	100.0
22	Machinery and equipment	20.2	18.1	61.7	100.0
23	Motor veh., oth. transport equip. and parts	5.4	36.5	58.1	100.0
24	Electrical, electronic and communic. prod.	5.3	21.0	73.7	100.0
25	Non-metallic mineral products	59.8	19.4	20.8	100.0
26	Petroleum and coal products	85.7	6.7	7.6	100.0
27	Chemicals, pharmaceuticals & chemical prod.	36.5	25.9	37.6	100.0
28	Other manufactured products	7.6	14.8	77.6	100.0
29	Residential construction	100.0	0.0	0.0	100.0
30	Non-residential construction	100.0	0.0	0.0	100.0
31	Repair construction	100.0	0.0	0.0	100.0
32	Transportation and storage	75.7	16.1	8.2	100.0
33	Communications services	61.6	31.4	7.0	100.0
34	Other utilities	99.3	0.7	0.0	100.0
35	Wholesaling margins	67.6	32.0	0.4	100.0
36	Retailing margins	92.4	7.6	0.0	100.0
37	Gross imputed rent	100.0	0.0	0.0	100.0
38	Other finance, insurance, and real estate services	80.6	15.0	4.3	100.0
39	Business and computer services	74.2	16.8	9.0	100.0
40	Private education services	88.0	5.5	6.5	100.0
41	Health and social services	99.5	0.3	0.2	100.0
42	Accommodation services and meals	70.3	13.7	16.0	100.0
43	Other services	86.5	9.5	4.0	100.0
44	Transportation margins	55.5	44.5	0.0	100.0

Table 10: Alberta Industry Intensity Ratios - Closed Model
Comparison of 1996 and 1990*

	Industry	GDP at Factor Cost			Household Income			Employment		
		1996	1990	Diff.	1996	1990	Diff.	1996	1990	Diff.
1	Agricultural & Related Services Ind.	0.796	0.808	-0.012	0.410	0.296	0.114	0.209	0.304	-0.095
2	Fishing & Trapping Industries	0.889	1.057	-0.168	0.732	0.429	0.303	0.443	0.829	-0.386
3	Logging & Forestry Industries	0.814	0.858	-0.044	0.493	0.593	-0.100	0.149	0.159	-0.010
4	Mining Industries	0.975	0.946	0.029	0.566	0.488	0.078	0.124	0.121	0.003
5	Crude Petroleum & Natural Gas	0.934	0.913	0.021	0.239	0.286	-0.047	0.056	0.071	-0.015
6	Quarry & Sand Pit Industries	0.958	0.866	0.092	0.550	0.355	0.195	0.155	0.124	0.031
7	Service Related To Mineral Extract.	0.987	0.916	0.071	0.656	0.613	0.043	0.166	0.180	-0.014
8	Food Industries	0.704	0.708	-0.004	0.362	0.342	0.020	0.149	0.215	-0.066
9	Beverage Industries	0.611	0.693	-0.082	0.321	0.338	-0.017	0.095	0.102	-0.007
11	Rubber Products Industries	N/A	0.603	N/A	N/A	0.641	N/A	N/A	0.191	N/A
12	Plastic Products Industries	N/A	0.691	N/A	N/A	0.359	N/A	N/A	0.127	N/A
13	Leather & Allied Products Ind.	N/A	0.775	N/A	N/A	0.405	N/A	N/A	0.175	N/A
14	Primary Textile & Textile Prod.Ind.	N/A	0.744	N/A	N/A	0.322	N/A	N/A	0.115	N/A
15	Clothing Industries	N/A	0.662	N/A	N/A	0.434	N/A	N/A	0.189	N/A
16	Wood Industries	0.851	0.905	-0.054	0.428	0.593	-0.165	0.124	0.182	-0.058
17	Furniture & Fixture Industries	0.786	0.804	-0.018	0.521	0.523	-0.002	0.169	0.198	-0.029
18	Paper & Allied Products Industries	0.786	0.785	0.001	0.346	0.316	0.030	0.088	0.090	-0.002
19	Printing, Publishing & Allied Ind.	0.899	0.892	0.007	0.589	0.621	-0.032	0.175	0.201	-0.026
20	Primary Metal Industries	0.491	0.551	-0.060	0.221	0.350	-0.129	0.054	0.094	-0.040
21	Fabricated Metal Product Industries	0.757	0.781	-0.024	0.491	0.540	-0.049	0.133	0.173	-0.040
22	Machinery Industries	N/A	0.742	N/A	N/A	0.508	N/A	N/A	0.161	N/A
23	Transportation Equipment Industries	N/A	0.847	N/A	N/A	0.656	N/A	N/A	0.198	N/A
24	Electrical & Electronic Products	0.492	0.710	-0.218	0.319	0.430	-0.111	0.086	0.135	-0.049
25	Non-Metallic Mineral Products Ind.	0.858	0.857	0.001	0.413	0.437	-0.024	0.114	0.135	-0.021
26	Refined Petroleum & Coal Products	0.848	0.873	-0.025	0.269	0.332	-0.063	0.068	0.083	-0.015
27	Chemical & Chemical Products Ind.	0.793	0.817	-0.024	0.229	0.266	-0.037	0.056	0.071	-0.015
28	Other Manufacturing Industries	0.827	0.759	0.068	0.546	0.550	-0.004	0.127	0.211	-0.084
29	Construction Industries	0.843	0.862	-0.019	0.604	0.617	-0.013	0.162	0.168	-0.006
30	Transportation Industries	0.994	1.026	-0.032	0.654	0.688	-0.034	0.188	0.226	-0.038
31	Pipeline Transport Industries	0.984	0.937	0.047	0.341	0.254	0.087	0.095	0.066	0.029
32	Storage & Warehousing Industries	1.088	1.062	0.026	0.756	0.702	0.054	0.202	0.226	-0.024
33	Communication Industries	1.021	1.073	-0.052	0.540	0.589	-0.049	0.149	0.162	-0.013
34	Other Utility Industries	0.894	1.068	-0.174	0.279	0.269	0.010	0.070	0.078	-0.008
35	Wholesale Trade Industries	1.054	1.107	-0.053	0.702	0.719	-0.017	0.208	0.229	-0.021
36	Retail Trade Industries	1.114	1.130	-0.016	0.827	0.806	0.021	0.369	0.357	0.012
37	Finance & Real Estate Industries	0.880	0.964	-0.084	0.548	0.499	0.049	0.160	0.144	0.016
38	Insurance Industries	0.865	0.717	0.148	0.473	0.705	-0.232	0.130	0.177	-0.047
40	Owner Occupied Dwellings	0.952	0.955	-0.003	0.365	0.290	0.075	0.094	0.030	0.064
41	Business Service Industries	1.158	1.180	-0.022	0.869	0.879	-0.010	0.247	0.267	-0.020
42	Educational Service Industries	0.938	1.028	-0.090	0.697	0.794	-0.097	0.213	0.253	-0.040
43	Health Services Industry	1.228	1.273	-0.045	0.947	0.987	-0.040	0.419	0.235	0.184
44	Accommodation & Food Service Ind.	0.952	0.979	-0.027	0.658	0.644	0.014	0.344	0.353	-0.009
45	Amusement & Recreational Services	1.019	0.979	0.040	0.676	0.557	0.119	0.295	0.239	0.056
46	Personal & Household Service Ind.	1.102	1.227	-0.125	0.788	0.880	-0.092	0.383	0.309	0.074
47	Other Service Industries	1.057	1.090	-0.033	0.681	0.674	0.007	0.269	0.348	-0.079

*Industries correspond to those in 1990 publication
N/A = Not Available

Table 11: Alberta Commodity Intensity Ratios - Closed Model
Comparison of 1996 and 1990*

	Industry	GDP at Factor Cost			Household Income			Employment		
		1996	1990	Diff.	1996	1990	Diff.	1996	1990	Diff.
1	Grains	0.796	0.712	0.084	0.410	0.261	0.149	0.209	0.268	-0.059
2	Other Agricultural Products	0.796	0.631	0.165	0.412	0.233	0.179	0.208	0.237	-0.029
3	Forestry Products	0.816	0.827	-0.011	0.488	0.561	-0.073	0.152	0.157	-0.005
4	Fishing & Trapping Products	0.889	0.058	0.831	0.732	0.023	0.709	0.443	0.045	0.398
5	Metallic Ores & Concentrates	0.000	0.001	-0.001	0.000	0.000	0.000	0.000	0.000	0.000
6	Mineral Fuels	0.935	0.883	0.052	0.246	0.282	-0.036	0.058	0.070	-0.012
7	Non-Metallic Minerals	0.933	0.641	0.292	0.413	0.230	0.183	0.106	0.066	0.040
8	Services Incidental to Mining	0.987	0.865	0.122	0.655	0.578	0.077	0.166	0.170	-0.004
9	Meat, Fish & Dairy Products	0.706	0.540	0.166	0.363	0.255	0.108	0.151	0.176	-0.025
10	Fruit, Veg, Feed, Misc Food Products	0.800	0.293	0.507	0.507	0.154	0.353	0.230	0.073	0.157
11	Beverages	0.800	0.408	0.392	0.507	0.202	0.305	0.230	0.062	0.168
13	Rubber, Leather, Plastic Fab. Products	0.749	0.127	0.622	0.383	0.079	0.304	0.113	0.027	0.086
14	Textile Products	0.757	0.142	0.615	0.571	0.070	0.501	0.162	0.026	0.136
15	Knitted Products & Clothing	0.698	0.030	0.668	0.439	0.020	0.419	0.121	0.009	0.112
16	Lumber, Sawmill, Other Wood Products	0.853	0.582	0.271	0.434	0.383	0.051	0.127	0.120	0.007
17	Furniture & Fixtures	0.788	0.254	0.534	0.516	0.164	0.352	0.166	0.062	0.104
18	Paper & Paper Products	0.792	0.352	0.440	0.361	0.151	0.210	0.093	0.044	0.049
19	Printing & Publishing	0.907	0.410	0.497	0.597	0.284	0.313	0.178	0.092	0.086
20	Primary Metal Products	0.534	0.193	0.341	0.265	0.112	0.153	0.066	0.032	0.034
21	Metal Fabricated Products	0.757	0.267	0.490	0.486	0.180	0.306	0.132	0.057	0.075
22	Machinery & Equipment	0.710	0.145	0.565	0.418	0.096	0.322	0.110	0.030	0.080
23	Autos, Trucks, Other Transp Equipment	0.809	0.074	0.735	0.534	0.054	0.480	0.151	0.017	0.134
24	Elec. & Communications Products	0.518	0.121	0.397	0.333	0.071	0.262	0.090	0.022	0.068
25	Non-Metallic Mineral Products	0.858	0.505	0.353	0.414	0.255	0.159	0.115	0.079	0.036
26	Petroleum & Coal Products	0.880	0.784	0.096	0.259	0.284	-0.025	0.064	0.071	-0.007
27	Chemicals, Chemical Products	0.792	0.411	0.381	0.235	0.142	0.093	0.060	0.041	0.019
28	Misc. Manufactured Products	0.831	0.173	0.658	0.539	0.098	0.441	0.139	0.033	0.106
29	Residential Construction	0.757	0.783	-0.026	0.549	0.570	-0.021	0.162	0.160	0.002
30	Non-Residential Construction	0.862	0.869	-0.007	0.621	0.613	0.008	0.159	0.167	-0.008
31	Repair Construction	0.918	0.962	-0.044	0.685	0.727	-0.042	0.193	0.189	0.004
32	Transportation & Storage	0.995	0.687	0.308	0.537	0.404	0.133	0.156	0.131	0.025
33	Communication Services	1.021	0.698	0.323	0.541	0.385	0.156	0.150	0.106	0.044
34	Other Utilities	0.944	0.888	0.056	0.370	0.224	0.146	0.096	0.064	0.032
35	Wholesale Margins	1.037	0.690	0.347	0.687	0.448	0.239	0.204	0.143	0.061
36	Retail Margins	1.112	1.042	0.070	0.822	0.739	0.083	0.366	0.327	0.039
37	Imputed Rent of Owner Occupied. Dwellings	0.952	0.955	-0.003	0.365	0.290	0.075	0.094	0.030	0.064
38	Other Finance, Insurance, Real Estate	0.888	0.779	0.109	0.548	0.316	0.232	0.162	0.091	0.071
39	Business Services	1.134	0.812	0.322	0.828	0.597	0.231	0.238	0.186	0.052
40	Personal & Other Miscellaneous Services	N/A	0.763	N/A	N/A	0.515	N/A	N/A	0.214	N/A

* Commodities correspond to those in 1990 publication

N/A = Not Available

Alberta Economic Multipliers 1996

APPENDIX 1: INDUSTRY AGGREGATION PARAMETERS

	Industry	Worksheet Level Number
1	Agriculture & Related Service Industries	1 - 3
2	Fishing & Trapping Industries	4
3	Logging & Forestry Industries	5, 6
4	Mining Industries	7 - 14
5	Crude Petroleum & Natural Gas Industries	15
6	Quarry & Sand Pit Industries	16
7	Services Related to Mineral Extraction	17
8	Food Industries	18 - 31
9	Beverage Industries	32 - 35
11,12	Rubber & Plastics Products Industries	38 - 40, 42 -46
13 - 16	Leather, Textiles & Clothing	41, 47 - 61
17	Wood Industries	62 - 69
18	Furniture & Fixture Industries	70 - 72
19	Paper & Allied Products Industries	73 - 78
20	Printing, Publishing & Allied Industries	79 - 82
21	Primary Metal Industries	83 - 90
22	Fabricated Metal Products Industries	91 - 100
23, 24	Machinery & Transportation Equipment Industries	101 - 120
25	Electrical & Electronic Products Industries	121 - 134
26	Non-Metallic Mineral Products Industries	135 - 142
27	Refined Petroleum & Coal Products Industries	143 - 144
28	Chemical & Chemical Products Industries	145 - 153
29	Other Manufacturing Industries	36, 37, 154 - 162
30	Construction Industries	163 - 171
31	Transportation Industries	172 - 180
32	Pipeline Transportation Industries	181 - 182
33	Storage & Warehousing Industries	183 - 184
34	Communications Industry	185 - 188
35	Other Utility Industries	189 - 191
36	Wholesale Trade Industries	192
37	Retail Trade Industries	193
38	Finance & Real Estate Industries	194 - 199
39	Insurance Industries	200
40	Owner Occupied Dwellings	201
41	Business Service Industries	202 - 206

	Industry	Worksheet Level Number
42	Educational Service Industries	207
43	Health & Social Services Industries	208 - 209
44	Accommodation & Food Services Industries	210 - 211
45	Amusement & Recreational Services Industries	212 - 215
46	Personal & Household Services Industries	216 - 217
47	Other Service Industries	218 - 223
50	N. B. - P Non-Profit Orgs. Excl. Education	231 - 233, 235
51	N. B. - P Educational Institutions	234
52	N. B. - G Hospitals & Residential Care Facilities	236 - 237
53	N. B. - G Education	238 - 239
54	N. B. - G Defence Services	240
55	N. B. - G Other Municipal Government	241
56	N. B. - G Other Provincial Government	242
57	N. B. - G Other Federal Government	243
58	Households	

APPENDIX 2: INDUSTRY CODES AT THE WORKSHEET (W) LEVEL IN TERMS OF 1980 SIC

No.	Industry Title - W	1980 SIC
1	Livestock Farms	011, 012
2	Field Crop Farms	013-017
3	Service Industries Incidental to Agriculture	021-023
4	Fishing & Trapping Industries	031-033
5	Logging Industry	041
6	Forestry Services Industry	051
7	Gold Mines	0611
8	Other Metal Mines	0612-0616, 0619
9	Iron Mines	0617
10	Asbestos Mines	0621
11	Potash Mines	0624
12	Salt Mines	0625
13	Other Non-Metal Mines (Except Coal)	0622, 0623, 0629
14	Coal Mines	063
15	Crude Petroleum & Natural Gas Industries	071
16	Quarry & Sand Pit Industries	081, 082
17	Service Ind. Incidental to Mineral Extraction	091, 092
18	Meat & Meat Products Ind. (Except Poultry)	1011
19	Poultry Products Industry	1012
20	Fish products industry	102
21	Fruit and vegetable industries	103
22	Dairy products industries	104
23	Cereal Grain Flour, Flour Mixes & Cereal Food Ind.	1051, 1052
24	Feed industry	1053
25	Vegetable Oil Mills (Exc. Corn Oil)	106
26	Biscuit industry	1071
27	Bread & Other Bakery Products Ind.	1072
28	Cane & Beet Sugar Industry	1081
29	Chewing Gum, Sugar & Chocolate Confect. Ind.	1082, 1083
30	Tea and Coffee Industry	1091
31	Other Misc. Food Products Industries	1092-1099
32	Soft Drink Industry	111
33	Distillery Products Industry	112
34	Brewery Products Industry	113
35	Wine Industry	114
36	Leaf Tobacco Industry	121

No.	Industry Title - W	1980 SIC
37	Tobacco Products Industry	122
38	Tire & Tube Industry	151
39	Rubber Hose & Belting Industry	152
40	Other Rubber Products Industry	159
41	Natural Fibres Processing & Felt Products Ind.	191
42	Foamed & Expanded Plastic Prod. Ind.	161
43	Plastic Pipe & Pipe Fittings Industry	162
44	Plastic Film & Sheeting Industry	163
45	Plastic Bag Industry	1691
46	Other Plastic Products Industry, n.e.c.	1699
47	Leather Tanneries	1711
48	Footwear Industry	1712
49	Misc. Leather & Allied Products Industry	1713, 1719
50	Man-Made Fibre & Filmament Yarn Industry	181
51	Other Spun Yarn & Woven Cloth Industries	1829
52	Wool Yarn & Woven Cloth Industry	1821
53	Broad Knitted Fabric Industry	183
54	Canvas & Related Products Industry	193
55	Other Textile Products Industries	199
56	Carpet, Mat and Rug Industriy	192
57	Men's and Boys' Clothing Industries	243
58	Women's Clothing Industries	244
59	Children's Clothing Industries	245
60	Misc. Clothing & Apperel Industries	2491-2493, 2495, 2499
61	Hosiery Industry	2494
62	Sawmill, Planing Mill & Shingle Mill Prod. Ind.	251
63	Veneer & Plywood Industries	252
64	Prefab. Wood Build, Kitchen Cabinet & Vanity Ind.	2541, 2542
65	Wooden Door, Window & Other Millwork Ind.	2543, 2549
66	Wooden Box & Pallet Industry	256
67	Coffin and Casket Industry	258
68	Particle & Wafer Board Industries	2592, 2593
69	Wood Preservation & Other Wood Ind., n.e.c.	2591, 2599
70	Household Furniture Industries	261
71	Office Furniture Industries	264
72	Other Furniture & Fixture Industries	269
73	Pulp Industry	2711
74	Newsprint Industry	2712
75	Paperboard, Building Board & Other Paper Ind.	2713 - 2719
76	Asphalt Roofing Industry	272
77	Paper Box and Bag Industry	273

No.	Industry Title - W	1980 SIC
78	Other Converted Paper Products Industry	279
79	Commercial Printing Industries	281
80	Publishing Industries	283
81	Combined Publishing & Printing Industries	284
82	Platemaking, Typesetting & Bindery Industry	282
83	Ferro-Alloys Industry & Steel Foundries	2911, 2912
84	Other Primary Steel Industries	2919
85	Steel Pipe & Tube Industry	292
86	Iron Foundries	294
87	Non-Ferrous Metal Smelting & Refining Industry	295
88	Aluminum Rolling, Casting & Extruding Industries	296
89	Copper & Copper Alloy Rolling, Casting & Extruding	297
90	Other Rolling, Casting & Extruding Non-Ferrous Ind.	299
91	Power Boiler & Heat Exchanger Industry	301
92	Pre-Engineered Metal Bldg. Ind. (Excl. Portable)	3023
93	Fabricated Structural Metal Products Ind., n.e.c.	3021, 3022, 3029
94	Ornamental & Architectural Metal Products Ind.	303
95	Stamped, Pressed & Coated Metal Products Ind.	304
96	Wire and Wire Products Industries	305
97	Hardware, Tool & Cutlery Industries	306
98	Heating Equipment Industry	307
99	Machine Shops Industry	308
100	Other Metal Fabricating Industries	309
101	Agriculture Implement Industry	311
102	Commercial Refrigeration & Air Cond. Equip. Ind.	312
103	Compressor, Pump, Turbine & Other Equip. Ind.	3191, 3194
104	Construction, Mining & Handling Machinery Ind.	3192
105	Sawmill, Woodwork & Other Machinery Ind., n.e.c.	3193, 3199
106	Aircraft & Aircraft Parts Industry	321
107	Motor Vehicle Industry	323
108	Truck & Bus Body & Trailer Industries	324
109	Motor Vehicle Engine & Engine Parts Ind.	3251
110	Motor Vehicle Wiring Assemblies Industry	3252
111	Motor Vehicle Stampings Industry	3253
112	Motor Vehicle Steering & Suspension Parts Ind.	3254
113	Motor Vehicle Wheel & Brake Industry	3255
114	Motor Vehicle Plastic Parts & Accessories Ind.	3256
115	Motor Vehicle Fabric Accessories Industry	3257
116	Other Motor Vehicle Access. & Parts Industry	3259
117	Railroad Rolling Stock Industry	326
118	Shipbuilding and Repair Industry	327

No.	Industry Title - W	1980 SIC
119	Boatbuilding and Repair Industry	328
120	Other Transportation Equipment Industries	329
121	Small Electrical Appliance Industry	331
122	Major Appliance Ind. (Elec. & Non-Elec.)	332
123	Electric Lighting Industries	333
124	Record Players, Radio & TV Receiver Ind.	334
125	Telecommunication Equipment Ind.	3351
126	Electronic Parts & Components Ind.	3352
127	Other Communication & Electronic Equipment Ind.	3359
128	Electronic Computing & Peripheral Equipment Ind.	3361
129	Electronic & Other Office, Business Mach. Ind.	3362-3369
130	Electrical Transformer Industry	3371
131	Switchgear, Protect. & Other Elec. Ind. Equip. Ind.	3372-3379
132	Communications & Energy Wire & Cable Ind.	338
133	Battery Industry	3391
134	Misc. Electrical Product Industries	3392, 3399
135	Clay Products Industries	351
136	Hydraulic Cement Industry	352
137	Concrete Products Industries	354
138	Ready-Mix Concrete Industry	355
139	Glass & Glass Products Industries	356
140	Abrasives Industry	357
141	Lime Industry	358
142	Other Non-Metallic Mineral Products Ind.	359
143	Refined Petroleum Products Industries	361
144	Other Petroleum & Coal Products Industries	369
145	Industrial Inorganic Chemical Ind., n.e.c.	3711
146	Industrial Organic Chemical Ind., n.e.c.	3712
147	Agricultural Chemical Industries	372
148	Plastic & Synthetic Resin Industry	373
149	Pharmaceutical & Medicine Industry	374
150	Paint and Varnish Industry	375
151	Soap & Cleaning Compounds Industry	376
152	Toilet Preparations Industry	377
153	Other Chemical Products Industries	379
154	Indicating, Recording & Controlling Instruments Ind.	3911
155	Other Scientific & Professional Equipment Ind.	3912-3914
156	Jewellery & Precious Metals Industry	392
157	Sporting Goods Industry	3931
158	Toys and Games Industry	3932
159	Sign and Display Industry	397

No.	Industry Title - W	1980 SIC
160	Floor Tile, Linoleum & Coated Fabric Industry	3993
161	Musical Instrument & Sound Recording Industry	3994
162	Misc. Manufactured Products Ind., n.e.c.	3991, 3992, 3999
163	Repair Construction	401-449
164	Residential Construction	401-449
165	Non-Residential Building Construction	401-449
166	Road, Highway & Airport Runway Construction	401-449
167	Gas & Oil Facility Construction	401-449
168	Electric Power, Dams & Irrigation Construction	401-449
169	Railway & Telecommunication Construction	401-449
170	Other Engineering Construction	401-449
171	Construction, Other Activities	401-449
172	Air Transport & Related Service Industries	451, 452
173	Railway Transport & Related Service Industries	453
174	Water Transport & Related Service Industries	454, 455
175	Truck Transport Industries	456
176	Urban Transit Systems Industry	4571
177	Interurban & Rural Transit Systems Industry	4572
178	Taxicab & Other Transportation Industries	458
179	School & Other Bus Operations Industries	4573-4575
180	Other Services Ind. Incidental to Transportation	459
181	Natural Gas Pipeline Transportation Industry	4611
182	Crude Oil & Other Pipeline Transport Industries	4612, 4619
183	Grain Elevator Industry	471
184	Other Storage & Warehousing Industries	479
185	Radio & TV Broadcasting Industries	4811-4813
186	Cable Television Industry	4814
187	Telecommunication Carriers Industry	482, 483
188	Postal & Courier Service Industry	484
189	Electric Power Systems Industry	491
190	Gas Distribution Systems Industry	492
191	Water Systems & Other Utility Industries, n.e.c.	493, 499
192	Wholesale Trade Industries	501-599
193	Retail Trade Industries	601-692
194	Central Bank	701
195	Banks & Other Deposit Accepting Intermediaries	702-704, 709
196	Credit unions	705
197	Other financial Intermediary Industries	711-729, 741-749
198	Real Estate Operator Industries	7511, 7512, 759
199	Insurance & Real Estate Agent Industries	761
200	Insurance Industries	731, 732, 733

No.	Industry Title - W	1980 SIC
201	Owner Occupied Dwellings	7513
202	Computer & Related Services	772
203	Accounting & Legal Services	773, 776
204	Architectural, Engineering & Other Scientific Serv.	775
205	Advertising Services	774
206	Miscellaneous Business Services	771, 777, 779
207	Educational Services Industries	851, 852, 854-859
208	Other Health & Social Services Industries	862-864, 867, 869
209	Health Practitioners & Medical Laboratories Ind.	865, 866, 868
210	Accommodation Service Industries	911-914
211	Food & Beverage Service Industries	921, 922
212	Motion Picture, Audio & Video Prod. & Distribution	961
213	Motion Picture Exhibition	962
214	Other Amusement & Recreational Services Ind.	963-965, 969
215	Lotteries, Bingos, Casinos	966
216	Laundries & Cleaners	972
217	Other Personal Service Industries	971, 973, 974, 979
218	Photographers	993
219	M & E, Auto & Truck Rental & Leasing Ind.	991, 992
220	Business & Professional Membership Organizations	982-986
221	Travel Services	996
222	Other Services, n.e.c.	999
223	Other Repair Serv. & Serv. To Buildings & Dwellings	994, 995
224	Operating Supplies	Fictive
225	Office Supplies	Fictive
226	Cafeteria Supplies	Fictive
227	Laboratory Supplies	Fictive
228	Travel & Entertainment	Fictive
229	Advertising & promotion	Fictive
230	Transportation margins	Fictive

NON-BUSINESS SECTOR INDUSTRIES

No.	Industry Title - W	1980 SIC
231	N.B. - P Religious Organizations	981
232	N.B. - P Welfare Organizations	864
233	N.B. - P Sports & Recreation Clubs	961-969
234	N.B. - P Educational Institutions	851, 852, 854-859

No.	Industry Title - W	1980 SIC
235	N.B. - P Other Organizations	3999, 4571, 4811-4813, 601-692, 711-729, 741-749, 751, 759, 761, 771, 773, 775, 776, 777, 779, 862-869, 911-914, 921, 922, 971, 973, 974, 979, 982-986, 991-999
236	N.B. - G Hospitals	861
237	N.B. - G Residential Care Facilities	862
238	N.B. - G University Education	853
239	N.B. - G Other Education Services	851, 852, 854-859
240	N.B. - G Defence Services	811
241	N.B. - G Other Municipal Government	451, 452, 459, 493, 499, 751, 759, 832-837, 862, 863, 864, 867, 869, 963-964, 969, 971, 973, 974, 979, 982-986, 999
242	N.B. - G Other Provincial Government	021-023, 031-033, 051, 3999, 451, 452, 454, 455, 459, 4811-4813, 493, 499, 711-729, 731-733, 741-749, 751, 759, 822-827, 862-869, 911-914, 921, 922, 961, 963-965, 966, 969, 982-986, 996
243	N.B. - G Other Federal Government	051, 451, 452, 454, 455, 459, 4811-4813, 711, 729, 731-733, 741-749, 751-759, 812-817, 911-914, 921, 922, 961, 963-965, 969

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